AIR TRAFFIC CONTROL TRAINING SERIES

RADAR

RADAR FINAL CONTROL (QTP)
SIMULATOR QUALIFICATION TRAINING PACKAGE (QTP)

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FOREWARD

PURPOSE: This publication is for use in the training of USAF Air Traffic Controllers and is not intended to replace, substitute, or supersede official regulations, procedures, or directives.

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INTRODUCTION: This Air Traffic Control (ATC) Qualification Training Package (QTP) identifies the tasks required for completion of Radar Final Control (RFC) position training using a simulator for award of SEI 365. ***The authorized simulators for certification are UFA and Tower Simulation System (TSS) Precision Approach Radar (PAR) Gold.*** This QTP contains a recommended completion time, knowledge and performance standards, mandatory scenarios and certification procedures. It is designed to train, evaluate, and certify the trainee on knowledge and practical application standards required for certification in the RFC position (PAR training only) using simulation equipment.

DEFINITION: Radar Final Control (RFC) - An ATC service that provides navigational guidance or approach monitoring during the final approach phase of flight.   This service normally includes precision approach radar (PAR) approaches, instrument approach monitoring using precision approach radar equipment when final approach courses are coincident, flight following, airport surveillance radar (ASR) approaches and safety alert services.   Additional services are provided within system capability.

INSTRUCTIONS: This QTP shall be utilized by all ATC radar facilities, *without live PAR capability*, to train PAR controllers for award of SEI using *simulator* traffic only.   ***It is not intended to replace training programs that have the capability to provide live training and certification.*** Controllers must have prior qualification in and possession of SEI 053, 056 or 364, before being entered into RFC training IAW the Enlisted Classification Directory.   Only trainer qualified controllers, holding SEI 365, are authorized to train controllers in the RFC position.

OBJECTIVE: Using this QTP, the trainee will demonstrate knowledge and performance standards for the PAR position. SEI 365 will be awarded after successful completion of training. This training program is designed to train air traffic controllers, in the PAR position, using simulation equipment only to support the war fighting mission. Training on the FPN-62 and AN/GPN-22 equipment is not possible, with the UFA or TSS PAR Gold simulator, and will only be trained to the knowledge level. Controllers will complete training on FPN 62 or AN/GPN-22 equipment at their first available duty station prior to PAR certification.

DOCUMENTATION: Trainers shall conduct and document training (periodic) evaluations IAW AFI 13-203. Training evaluations shall be retained until SEI 365 is awarded.

TIME REQUIREMENTS: 21 calendar days.

KNOWLEDGE AND PERFORMANCE STANDARDS: Knowledge and practical application standards have been identified and written into each task. To complete this QTP, the trainee must learn all knowledge requirements, and demonstrate a practical application of procedures using simulated traffic. Eight scenarios have been developed and incorporated into the QTP. The simulator scenarios progress from easy to difficult to ensure proper trainee progression.   All simulator scenarios will be completed and documented prior to position certification.

CERTIFICATION PROCEDURES: The trainee must pass a certification test with a minimum score of 80%, demonstrate in-depth academic knowledge of scope setup procedures and effectively control 5 PAR approaches, to include emergency and no-gyro procedures, to be awarded SEI 365.

TRAINING STANDARD TERM DEFINITIONS:

Minor Errors – Errors that don't cause confusion, airspace violation, or jeopardize safety of flight

Minimal Assistance – Assistance is given to complete only the hardest parts of a task

Without Assistance – All portions of a task are completed but minor errors can occur

Without Error – Task is completed without error or assistance

Complete scenarios 1 and 2 for tasks 1 - 5.

TASK 1: Radar Identification Procedures/Handoff Procedures/Confirm Aircraft Identification

STS: 7.101, 7.102, and 7.104
MTTR: 210, 211, 213

OBJECTIVE: Explain and demonstrate the correct procedures for radar identifying aircraft using primary radar, making and accepting handoffs, and confirming aircraft identification. *Complete CBT-R-9.*

STANDARD: *Knowledge:* Explain the procedures for radar identification, handoffs, and confirming radar identification without assistance. *Practical application:* Using correct phraseology, accept radar handoffs and confirm aircraft identification without error.

TASK 2: Communication Check/Alternate Communications/Transmission Acknowledgement

STS: 9.1, 9.2, and 9.3
MTTR: 262, 263, 264

OBJECTIVE: Explain and demonstrate the procedures to conduct communication checks with aircraft on instrument final and radar final approach using correct phraseology. Explain and demonstrate alternate communication procedures for RFC. Explain and demonstrate when to instruct aircraft not to acknowledge further transmissions using correct phraseology. *Complete CBT-G-20.*

STANDARD: *Knowledge:* Explain the procedures to conduct communication checks, alternate communication, and transmission acknowledgement with minimal assistance. *Practical Application:* Perform communication checks in RFC without error. Demonstrate using alternate communications, and inform pilots when not to acknowledge further transmissions without error. Demonstrate correct phraseology without error.

TASK 3: PAR Distance from Touchdown

STS: 9.4
MTTR: 265

OBJECTIVE: Explain and demonstrate the procedures to inform an aircraft of its distance from touchdown using correct phraseology. *Complete CBT-R-1.*

STANDARD: *Knowledge:* Explain when to inform an aircraft of its distance from touchdown with minimal assistance. *Practical application:* Use correct phraseology to inform an aircraft, conducting PAR approaches, of its distance from touchdown without assistance.

TASK 4: Vector Aircraft/No-Gyro Procedures

STS: 7.106, 7.123
MTTR: 215, 232

OBJECTIVE: Explain and demonstrate the procedures for issuing radar vectors and no-gyro vectors to include when to instruct aircraft to make half standard rate turns, and what standard/half standard rate turns are in degrees.

STANDARD: _Knowledge:_ Explain the procedures for issuing radar and no-gyro vectors and when to make half standard rate turns without assistance. _Practical application:_ Using correct phraseology, issue radar and no-gyro vectors to aircraft on final approach and complete a PAR approach using radar and no-gyro vectors within PAR safety limits without error.

TASK 5: PAR Course Guidance/Glidepath Information/Trend Information

STS: 9.7, 9.8, and 9.9
MTTR: 268, 269, 270

OBJECTIVE: Explain and demonstrate the procedures to issue/discontinue course, glidepath, and trend information using the correct phraseology. _Complete CBT-R-1._

STANDARD: _Knowledge:_ Explain the procedures to issue course, glidepath, and trend information with minimal assistance. _Practical application:_ Demonstrate correct phraseology while issuing the appropriate course, glidepath, and trend information without assistance

**Complete Scenarios 3 and 4 for tasks 6 - 11.**

TASK 6: PAR Glidepath Notification/Descent Notification

STS: 9.5, 9.6
MTTR: 266, 267

OBJECTIVE: Explain and demonstrate the procedures to issue glidepath notification and descent instructions using correct phraseology. _Complete CBT-R-1._

STANDARD: _Knowledge:_ Explain the procedures to issue glidepath notification and descent instructions without assistance. _Practical application:_ Demonstrate correct phraseology to issue glidepath notification and descent instructions as required without assistance.

TASK 7: Wheels Check

STS: 7.58
MTTR: 167

OBJECTIVE: Explain and demonstrate the procedures to issue wheels down check and the correct phraseology.

STANDARD: *Knowledge:* Explain the procedures to issue wheels down check without assistance. *Practical application:* Demonstrate correct phraseology to issue wheels down check without error.

TASK 8: Issue Landing Clearance/Landing Information

STS: 7.62, 7.64
MTTR: 171, 173

OBJECTIVE: Explain and demonstrate the procedures to issue landing clearance, climb out instructions, relay tower clearance verbatim, and appropriate landing information.

STANDARD: *Knowledge:* Explain the procedures to issue landing clearance, climb out instructions, relay tower landing clearance and appropriate landing information without assistance. *Practical application:* Demonstrate correct phraseology to issue landing clearances, climb out instructions and relay tower clearances and landing information without error.

TASK 9: Decision Height/Position Advisories

STS: 9.11, 9.12
MTTR: 272, 273

OBJECTIVE: Explain and demonstrate the procedures to inform aircraft when it reaches decision height. Explain and demonstrate the procedures to issue position advisories and when to discontinue position advisories. *Complete CBT-R-1.*

STANDARD: *Knowledge:* Explain the procedures to inform aircraft it has reached decision height and when to issue and discontinue position advisories without assistance. *Practical application:* Demonstrate correct phraseology to inform aircraft when it reaches decision height, and when to issue position advisories at the appropriate times without assistance

TASK 10: **ATC Communication Procedures**

STS: 7.6
MTTR: 115

OBJECTIVE: Explain and demonstrate the procedures to transfer communications.

STANDARD: _Knowledge:_ Explain the procedures to transfer communications without assistance. _Practical application:_ Demonstrate correct phraseology to transfer communications without error.

TASK 11: **Inter/Intra Facility Coordination**

STS: 7.7
MTTR: 116

OBJECTIVE: Explain and demonstrate the procedures to accomplish the required inter/intra facility coordination.

STANDARD: _Knowledge:_ Explain the proper inter/intra facility coordination procedures with minimal assistance. _Practical application:_ Demonstrate correct phraseology to conduct the appropriate coordination as necessary without error.

     **Complete Scenarios 5 and 6 for tasks 12 - 17.**

TASK 12: **Disseminate Weather Information**

STS: 6.3
MTTR: 99

OBJECTIVE: Explain and demonstrate the procedures to issue wind, weather information and advisories.

STANDARD: _Knowledge:_ Explain the procedures to issue wind, weather information and advisories without assistance.   _Practical application:_ Demonstrate correct phraseology to issue wind, weather information and advisories without error.

TASK 13: **Traffic Advisories**

STS: 7.48
MTTR: 157

OBJECTIVE: Explain and demonstrate the correct procedures to issue traffic advisories. _Complete CBT-R-5._

STANDARD: _Knowledge:_ Explain the procedures to issue traffic advisories with minimal assistance. _Practical application:_ Demonstrate correct phraseology to issue traffic advisories without error.

TASK 14: PAR for Approach Monitoring

STS: 9.13
MTTR: 274

OBJCTIVE: Explain and demonstrate when PAR equipment can be used for approach monitoring. Explain the weather requirements to monitor approaches. Explain and demonstrate what information to issue a pilot executing a non-precision approach. Explain and demonstrate when to inform aircraft when passing the final approach fix/outer marker. Explain and demonstrate what action to take if the aircraft exceeds the safety limits. Know how many aircraft a RFC controller may control/monitor at one time.

STANDARD: _Knowledge:_ Explain the procedures for approach monitoring using the PAR with minimal assistance. _Practical application:_ Demonstrate correct phraseology to conduct approach monitoring using PAR without assistance.

TASK 15: Radar Approaches

STS: 7.119
MTTR: 228

OBJECTIVE: Explain and conduct radar approaches to include military single frequency approaches.

STANDARD: _Knowledge:_ Explain radar approaches including single frequency approaches with minimal assistance. _Practical application:_ Conduct radar and single frequency approaches without assistance.

TASK 16: Approach/Arrival Clearance

STS: 7.115
MTTR: 224

OBJECTIVE: Explain and demonstrate the procedures to issue approach clearances to aircraft and why it may be required by the radar final controller.

STANDARD: _Knowledge:_ Explain procedures to issue approach clearances without assistance. _Practical application:_ Demonstrate the phraseology to issue an approach clearance without error.

TASK 17: **Wake Turbulence Separation/Sequence, Separate Arrivals/Departures**

STS: 7.72, 7.76, 7.77
MTTR: 181, 185, 186

OBJECTIVE: Explain and demonstrate the procedures to maintain appropriate wake turbulence separation minima for arrivals and departures. *Complete CBT-A-3 and CBT-R-12.*

STANDARD: *Knowledge:* Explain all separation minimums without assistance. *Practical application:* Ensure/maintain appropriate wake turbulence separation without error.

   Complete Scenario 7 and 8 for tasks 18 - 22.

TASK 18: **Formation Flights**

STS: 7.79
MTTR: 188

OBJECTIVE: Explain and demonstrate the procedures to control formation flights in RFC to include separation and coordination with tower. *Complete CBT-R-6.*

STANDARD: *Knowledge:* Explain the procedures to control formation flights, standard and non-standard, without assistance. *Practical application:* Control standard and non-standard formation flights ensuring appropriate separation and coordination without error.

TASK 19: **Go-Around Instructions/Altitude Restricted Low Approaches/ Minimum Distance Without Final Clearance/Missed Approach Instructions/Cancel Landing Clearance**

STS: 7.54, 7.56, 7.63, 7.66, 7.84
MTTR: 163, 165, 172, 175, 193

OBJECTIVE: Explain and demonstrate the procedures to issue missed approach information, breakout instructions/go-around and restricted low approach information. Explain the procedures when tower clearance is cancelled or not received.

STANDARD: *Knowledge:* Explain the procedures for issuing breakout, go-around instructions, restricted low approach information, and what actions to take if tower clearance is not received or cancelled without assistance. *Practical application:* Demonstrate the phraseology to issue appropriate breakout, go-around instructions, restricted low approach information, and what actions to take if tower clearance is not received or cancelled without error.

TASK 20: **PAR Elevation Failure Procedures**

STS: 9.10
MTTR: 271

OBJECTIVE: Explain and demonstrate the procedures available if the elevation portion of the PAR equipment fails. *Complete CBT-R-1.*

STANDARD: *Knowledge:* Explain the procedures if the elevation portion of the PAR fails without assistance. *Practical application:* Demonstrate the appropriate action/phraseology if the elevation portion of the PAR fails during a precision approach without error.

TASK 21: **Final Approach Abnormalities**

STS: 7.98
MTTR: 207

OBJECTIVE: Explain and demonstrate the procedures that are required whenever the completion of a safe approach is questionable due to safety limits being exceeded, position or identification of the aircraft are in doubt, radar contact is lost or a malfunctioning radar is suspected, or airport conditions or traffic preclude approach completion.

STANDARD: *Knowledge:* Explain the procedures required when completion of a safe approach is questionable without assistance. *Practical application:* Demonstrate identifying final approach abnormalities and providing the correct course of action when the completion of a safe approach is questionable due to safety limits being exceeded, position or identification of the aircraft are in doubt, radar contact is lost or a malfunctioning radar is suspected, or airport conditions or traffic preclude approach completion without error.

TASK 22: **Safety Alerts**

STS: 7.49
MTTR: 158

OBJECTIVE: Explain and demonstrate the procedures for issuing safety alerts to aircraft. *Complete CBT-R-7.*

STANDARD: *Knowledge:* Explain the procedures to issue safety alerts without assistance. *Practical application:* Demonstrate the phraseology to issue safety alerts as necessary without error.

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THE FOLLOWING TASKS ARE KNOWLEDGE BASED ONLY. PRACTICAL APPLICATION STANDARDS ARE NOT TRAINABLE USING SIMULATION EQUIPMENT. CONTROLLERS WILL BE TRAINED AT FIRST AVAILABLE DUTY LOCATION ON AN/GPN-22 PAR EQUIPMENT. UNIT LEVEL PAR TRAINING PROGRAMS WILL BE USED TO TRAIN CONTROLLERS ON AN/GPN-22 EQUIPMENT PRIOR TO CERTIFICATION.

TASK 23: **Precision Approach Radar Capabilities**

STS: 5.11
MTTR: 74

OBJECTIVE: Explain AN/GPN-22 controls and features. *Complete CBT-E-5, CBT-R-1 and AT-E-12.*

STANDARD: _Knowledge_: Explain controls and features of the AN/GPN-22 and their functions with minimal assistance. _Practical application_: N/A

TASK 24: **Precision Approach Radar/Alignment**

STS: 5.12
MTTR: 75

OBJECTIVE: Explain how to conduct pre-operation checks and ensure correct alignment. *Complete CBT-E-5 and AT-E-12.*

STANDARD: _Knowledge:_ Explain how to conduct pre-operation checks and alignment with minimal assistance. _Practical application:_ N/A

TASK 25: **Precision Approach Radar/Turnaround Procedures**

STS: 5.13
MTTR: 76

OBJECTIVE: Explain PAR turnaround procedures. *Complete CBT-E-5 and AT-E-12.*

STANDARD: _Knowledge_: Explain PAR turnaround procedures with minimal assistance. _Practical application:_ N/A